

Fig. 1 illustrates a graphical view of the efficacy of a typical mercury-free metal halide arc lamp versus the xenon buffer pressure in torrs;

5 Fig. 1A shows a graphical view of predicted efficacy at 300 watts for a 7mm bore lamp, with 24:1:2.2 Na/Sc/Li chemistry;

Fig. 2a is a diagrammatic, elevational view of an aspect of the invention;

10 Fig. 2b is a diagrammatic, elevational view of a preferred embodiment of the invention; and

FIG. 3 is a perspective view of a metal halide lamp employing an embodiment of the invention.

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#### BEST MODE FOR CARRYING OUT THE INVENTION

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following  
20 disclosure and appended claims taken in conjunction with the above-described drawings.

Referring now to the drawings with greater particularity, there is shown diagrammatically in Fig. 2a an arc tube 14 having an aspect ratio greater than 5 in  
25 accordance with the general precepts of the invention and in Fig. 2b an arc tube having an aspect ratio of about 10, in accordance with a preferred embodiment of the invention. In Figs. 2a and 2b the diameter of the arc tube is indicated by the letter A, while the legends >5A and 10A refer to the arc length.

30 Fig. 3 shows such an arc tube 14 as the light source in a metal halide lamp 100. The lamp 100 has a vitreous outer envelope 6 with a standard mogul screw base 4 attached to the stem end which is shown lowermost in the figure. A reentrant stem 8